

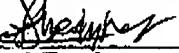
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 Leah Herzberg

Regarding the following Application:

Applicants: ROTH, Shmuel et al.

Examiner: XU, KEVIN K

Serial No./ 10/500,896  
Patent No.:

Group Art Unit: 2628

Filed/ March 3, 2004  
Issue Date:

Attorney Docket No.: P-4785-US

Title: ELECTRONIC COLOR DISPLAY FOR SOFT PROOFING

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Applicants: ROTH, Shmuel et al. Examiner: XU, Kevin K.

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## REPLY BRIEF

Mail Stop Appeal Brief – Patents  
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Alexandria, VA 22313-1450

This is in response to the Examiner's answer mailed on November 28, 2007.

**1. Grounds of Rejection to be Reviewed on Appeal**

The following grounds of rejection are to be reviewed in this Appeal:

- A. The Examiner's contention that claims 1-4, 6-13, 15-16, 18-22 are unpatentable under 35 USC §103(a), over United States Patent Number 6,304,237 to Karakawa ("Karakawa") in view of United States Patent Number 6,069,601 to Lind ("Lind").
- B. The Examiner's contention that claim 5 is unpatentable under 35 USC §103(a) over Karkawa in view of Lind in further view of United States Patent Number 6,972,736 to Wada ("Wada").
- C. The Examiner's contention that claims 14 and 17 are unpatentable under 35 USC §103(a) over Karkawa in view of Lind in further view of United States Patent Application Publication Number 2002-0122019 to Baba ("Baba").

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2. Reply to Examiner's Answer

A. **With respect to Claims 1-4, 6-13, 15-16 and 18-22, the Examiner has not made a prima facie case of obviousness because the Lind and Karakawa references teach away from each other**

In the Examiner's answer, the Examiner contended that "the Lind reference does not absolutely exclude the possibility of RGB color display system and therefore, is not limited to only a subtractive color system", relying on the citation from Lind that "if desired the pigmented layers may have spectral characteristics matched to non-process colors, such as red, green and blue, or any other color..." (col. 4 lines 6-11). However, the main point emphasized by the Applicant is that the manner of producing colors in Lind is subtractive by nature. The colors of the pigmented layers may be substantially any color desired by the user (although the purpose of Lind, as declared in column 3, lines 55-65, may require that the colors of the filters match the fundamental ink colors, which are usually cyan, yellow and magenta), but it doesn't change the fact that the manner of producing colors in Lind is subtractive, i.e. producing color by subtracting wavelengths from a polychromatic light.

Therefore, the colors chosen in Lind are colors of the pigmented layers by which polychromatic light is filtered. In Karakawa, however, there are monochromatic red, green and blue light, which are added to each other in different combinations in order to produce colors. Passing the monochromatic light of Karakawa through the pigmented layers of Lind (or through any other color filter) may not change the chromaticity of the light, it may only reduce the intensity of the light, which is not a desired result of neither Lind nor Karakawa. On the other hand, using the filter colors, chosen in Lind for producing ink colors, as the colors of the monochromatic light in Karakawa, may not bring the Karakawa device to produce the ink colors because in Karakawa these colors will be added to each other while in Lind the polychromatic light will be filtered through the pigmented layers having these colors. These two methods in principle will produce completely different colors. This forced combination, again, will bring a user away from any result desired by Lind or

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Karakawa. Therefore, the Lind reference and the Karakawa reference teach away from each other.

The Examiner has further contended that "claim 1 merely requires 'a light source generating light of a set of at least three colors having at least three different chromaticities' Nowhere in the said claim does it require that these said chromaticities must be chromaticities of an additive color system". However the recitation in claim 1 of "a light source generating light of a set of at least three colors having at least three different chromaticities" withholds a description of an additive manner of producing colors, because the light is "of at least three colors having at least three different chromaticities", which enables adding these chromaticities to each other in different combinations. In Lind however, the light has homogeneous chromaticity before, while and after passing through the filters, the chromaticity being changed by subtraction of light in certain wavelengths from the input light. At no moment in the process described in Lind, is the light "of a set of at least three colors having at least three different chromaticities", as recited in claim 1.

The Examiner has further stated that "a purpose of the invention of Lind is to select printing colorants... wherein the display appearance is substantially spectrally matched to a set of printing colorants". The Examiner has deduced that it would have been obvious to select the colorants of Lind to entirely cover a perceived gamut. To be precise, the method described in Lind include selection of the pigmented layers, each of the pigmented layers is selected for displaying a color substantially spectrally matched to one of the set of printing colors (Lind, column 3, lines 55-65). This is in contrast to the present invention in which different chromaticities of the generated light are selected. Therefore, in Lind the selected pigmented layers do not "generate light of at least three colors having at least three different chromaticities, respectively, said chromaticities being selected to define a viewed color gamut which entirely covers a perceived color gamut", as recited in claim 1. In Lind the pigmented layers are chosen to produce light in a specific color by passing light through the selected layers, the light having homogeneous chromaticity before, during and after the process.

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B. **With respect to Claims 1-4, 6-13, 15-16 and 18-22, the Examiner has not made a prima facie case of obviousness because the Lind and Karakawa references cannot be combined**

In the Examiner's answer, the Examiner has contended that establishing prima facie case of obviousness does not require that physical incorporation of the pigmented layers of Lind into the system of Karakawa will "physically operate". The Examiner further contended that "to establish prima facie obviousness requires there must be motivation or suggestion... to modify the reference or to combine reference teachings... one of ordinary skill in the art would be motivated to modify the teachings of Karakawa given the teachings of Lind in order to produce a proofed image because Lind provides the additional benefit of providing a better match to a printed reproduction than prior systems and methods can be achieved". The Examiner has overlooked the requirement that in the prior art there must be found a reasonable expectation of success in order to establish prima facie case of obviousness, which the Examiner has failed to show.

The Examiner's rejection in the Final Office Action is based on the Examiner's contention that Lind teaches "said chromaticities are selected to define a viewed color gamut which covers said perceived color gamut of said set of inks when printed on said substrate". The Examiner has overlooked the fact that the "chromaticities" defined in claim 1 are explicitly defined as chromaticities of "light of a set of at least three colors". This is not what Lind teaches. Lind teaches spectra of pigmented layers and does not teach chromaticities of light of a set of at least three colors. Since Karakawa does not teach pigmented layers, it is not clear how the teaching of Karakawa could be modified based on the teachings of Lind without "incorporation of the pigmented layers of Lind into the system of Karakawa". However, as shown by the Appellant in the appeal brief, such incorporation will not operate to bring the desired result.

Additionally, one of ordinary skilled in the art would not be motivated to modify the teachings of Karakawa given the teachings of Lind, because Karakawa indicates specific wavelengths of R, G and B "which are particularly useful for color display

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purposes", i.e. Karakawa does not motivate, and even teaches away from, for example, modifying the chromaticities of the monochromatic pulsed laser light source (which in any case cannot be modified by the pigmented layers of Lind).

Lastly, the Examiner stated that "Karakawa and Lind may be considered analogous art because both references teach combining three different color components to result in a generated image". This is clearly not true. Lind does not teach or suggest combining three different color components. There is no combination of different color components in Lind, only subtraction of wavelengths from initially white light.

**C. With respect to Claim 5, the Examiner has not made a prima facie case of obviousness because Neither Karakawa nor Lind can be combined with Wada**

In the Examiner's answer, the Examiner repeats his contention that Lind is not limited to subtractive color system (because the filters can produce Red, Green and Blue). However, this is not the essence of the appellant's arguments. The Examiner suggests to use the time sequential filter of Wada as the "color filtering mechanism to sequentially generate the light of said at least three colors by filtering said polychromatic light". On the other hand, the Examiner suggests selection of the colors according to the teachings of Lind, which teaches generation of colored light by a set of pigmented layers stacked on top of each other, each of the pigmented layers is selected for displaying a color substantially spectrally matched to one of the set of printing colors. These two methods contradict each other.

As argued by the Appellant in the appeal brief, choosing each of the segments of the rotary color filter taught by Wada to be substantially spectrally matched to one of the set of printing colors as taught by Lind, will not produce a viewed color gamut matched with a perceived color gamut of a set of inks when printed on a substrate. This is because additive combinations of the sequentially filtered colors would not imitate the layers of inks when printed on a substrate as subtractive layers of filters would. Therefore, a combination of Wada and Lind will not produce the desired result.

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Regarding combination of Karakawa and Wada, the Examiner contended that "Although Karakawa does teach a monochromatic light source with Red, Blue, and Green produced at the same time, Karakawa does not absolutely exclude the possibility of filtering the generated polychromatic light of Karakawa after mixing the monochromatic light sources into a single white light". The Examiner's suggestion to mix the monochromatic light sources, which were especially designed by Karakawa to be particularly useful for color display purposes, into a single white light, and then filter this white light by the rotating filter of Wada to produce again colors from this white light, is nonsensical. There is no reason whatsoever that a person skilled in the art will be motivated to do that.

Additionally, this contradicts the Examiner's allegation with respect to the rejection of claim 1. The Examiner has alleged that the light source to generate light of a set of at least three different chromaticities, defined in claim 1, is taught by the monochromatic red, green and blue pulsed laser light source of Karakawa. On the other hand, in the rejection of claim 5 the Examiner alleged that the light of said at least three colors is generated by the rotary color filter of Wada, after combining the monochromatic light sources of Karakawa into a single white light.

The Examiner further alleged that "Wada may be considered as analogous art because Wada along with both Karakawa and Lind teach combining three different color components to result in a generated image". Wada and Karakawa indeed combine three different color components to result in a generated image. However, Lind does not teach or suggest combining three different color components, only subtraction of wavelengths from initially white light.

**D. Claims 14 and 17 are patentable under 35 USC §103(a) over  
Karkawa in view of Lind in further view of Baba**

Claims 14 and 17 depend from claims 10 and 5, respectively. Accordingly, for at least the reasons stated above, the claims are allowable over the art of record.

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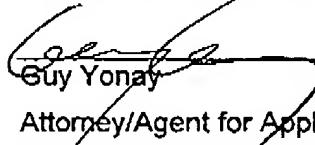
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Conclusion

In view of the foregoing arguments, and for at least the reasons discussed above, Appellants respectfully submit that the final rejection should be reversed and claims 1-22 should be allowed.

No fees are believed to be due in connections with this paper. However, if any such fees are due, please charge such fees to Deposit Account No. 50-3355.

Respectfully submitted,



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Dated: January 28, 2008

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